Alberta

Traffic Collision Statistics

2001

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2001 Overview

- The number of **traffic collisions increased 2.8%** over the past year from 104463 collisions in 2000 to 107391 in 2001.
- The number of **traffic injuries increased 4.2%** over the past year from 26464 injuries in 2000 to 27583 in 2001.
- The number of **traffic fatalities increased 11.0%** over the past year from 364 fatalities in 2000 to 404 in 2001.
- **The highest number of casualty collisions** occurred in **December.**
- **Friday** was the most collision-prone day of the week. As well, the largest percentage of fatal collisions occurred on Friday.
- **The most collision-prone period of time was the afternoon rush-hour.**
- **Casualty rates** were highest for persons between the **ages of 15 and 24.**
- **Male drivers** between the **ages of 16 and 19** had the highest involvement rate of all drivers involved in casualty collisions.
- Following too closely, running off the road and left turn across path were the most frequently identified improper driver actions contributing to casualty collisions.
- **Fatal collisions** occurred most frequently in **rural areas,** whereas **injury and property damage collisions** occurred more frequently in **urban areas.**
- **30.0% of pedestrians** involved in **fatal collisions had consumed alcohol prior to the collision** compared to **17.4% of pedestrians in injury collisions.**
- **21.0%** of drivers involved in fatal collisions **had consumed alcohol** prior to the crash compared to **5.0%** of drivers in injury collisions.
- Collision involved restraint users had a much lower injury rate (14.2%) than those not using restraints (37.8%).

Preface

The purpose of this report is to provide an overview of the "who", "what", "when", "where", "why", and "how" of traffic collisions which occurred in Alberta during 2001. Although the report is general in nature, it pays particular attention to casualty collisions, that is, those collisions which result in death or injury. Legislation in Alberta requires that a traffic collision which results in either death, injury or property damage to an apparent extent of $1000.00 or more, be reported immediately to an authorized peace officer. The officer completes a standardized collision report form which provides information on various aspects of the traffic collision. This report is based on the data collected from these report forms.

The collision report form is issued with standard instructions to every police service within Alberta, to be completed by the officer attending the scene of a motor vehicle collision or at a police station. Police priorities at the scene of a collision are to care for the injured, protect the motoring public and clear the roadway. Completion of the collision report form is a secondary, but necessary task.

After completion, the information on the collision report form is coded for input to computer files. The Alberta Collision Information System, which has been operational since 1978, undergoes several manual and computerized inspections each year in order to ensure maximum accuracy of the final data output. This collision information is used to make Alberta's roads safer for all road users. Due to continuing police investigation, some numbers presented in this report may be subject to revision. It should also be noted that not all percentage columns will total 100 due to rounding error.

This report was produced based on collisions reported to Alberta Transportation by police, at the time of printing. The numbers presented in this report will not be updated. However, the patterns and trends detailed in this report represent an accurate description of Alberta's traffic collision picture.

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Glossary

Alcohol Impaired - In the judgement of the police officer, driving ability was impaired by alcohol consumption. Whether or not the subject was actually charged is not taken into consideration by the collision report form.

Casualty Collision - A vehicle collision which results in either a fatal or personal injury.

Drinking Driver - Refers to those drivers judged by the police officer as having been drinking prior to the collision or as being alcohol impaired at the time of the collision. Whether or not the driver was actually charged is not taken into consideration by the collision report form.

Fatality - A fatality is the death of a person that occurs as a result of a motor vehicle collision within 30 days of the collision.

Had Been Drinking - In the judgement of the police officer, the driver had recently consumed alcohol but his driving ability was not obviously impaired.

Major Injury - Persons with injuries or complaint of pain that went to the hospital and were subsequently admitted even if for observation only.

Minor Injury - Persons with injuries or complaint of pain that went to the hospital, were treated in emergency (or refused treatment) and SENT HOME without ever being admitted to the hospital. (Also includes people who indicated that they intended to seek medical treatment).

Motorcyclist - Refers to drivers and passengers of motorcycles.

Occupant Casualties - Refers to people who were injured or killed as a result of a vehicle collision and were identified as being either a vehicle driver or passenger.

Property Damage - A vehicle collision which resulted in property damage exceeding $1000.00.

Reportable Collision - A vehicle collision which resulted in death, injury or property damage greater than $1000.00.

Rural - Any area outside of what is defined as **'Urban'.**

Urban - Any area within the corporate boundaries of a city, town, village or hamlet.

103-01810/

2001 Traffic Collision Summary

Introduction

During 2001, 107391 collisions were recorded on Alberta roadways. Property damage collisions (over $1000) represented 82.0% (88050) of this total while 17.7% (19000) were non-fatal injury collisions. Fatal collisions accounted for 0.3% (341) of the total reported collisions.

Five Year Trends

In terms of population, licensed drivers and registered vehicles the fatal collision and fatality rates are up slightly from 2000.

The non-fatal injury rate, has increased in 2001 in terms of population, licensed drivers and registered vehicles. The non-fatal injury collision rate has also increased in 2001.

Property damage collision rates decreased in 2001 in terms of licensed drivers and registered vehicles.

Provincial Comparisons

In order to get a clear picture of Alberta's traffic injuries in comparison to other provinces, rates rather than absolute numbers are utilized. In this instance, casualty rates per 10,000 population were examined.

Of the eight other provinces for which information was available one had a higher fatality rate than Alberta in terms of 10,000 population. Alberta recorded the highest injury rate, followed by Prince Edward Island and Manitoba.

Table 1.1

Alberta Traffic Collisions

1997 - 2001

Severity of Collision	2001	2000	1999	1998	1997
Fatal Collisions	341	312	305	358	357
Non-Fatal Injury Collisions	19000	18246	17398	16987	16231
Property Damage Collisions	88050	85905	77543	81256	75777
Total Reportable Collisions	**107391**	**104463**	**95246**	**98601**	**92365**
Number Killed	404	364	347	429	429
Number Injured	27583	26464	25451	24935	23916
Total Number of Casualties	**27987**	**26828**	**25798**	**25364**	**24345**

Observations

In 2001, the overall number of collisions increased 2.8% when compared to 2000. In 2001, injury collisions increased 4.1% and fatal crashes increased by 9.3%. The number of fatalities increased by 11.0% from 2000 to 2001, and the number of injuries increased by 4.2%. In terms of the past five years, overall collisions were lowest in 1997 and highest in 2001.

Table 1.2

Traffic Collision Rates

1997 - 2001

Severity of Collision	Rate Per 10,000 Population*					Rate Per 10,000 Licensed Drivers*					Rate Per 10,000 Registered Vehicles*				
	2001	2000	1999	1998	1997	2001	2000	1999	1998	1997	2001	2000	1999	1998	1997
Fatal Collisions	1.1	1.0	1.0	1.2	1.3	1.5	1.4	1.4	1.7	1.7	1.5	1.4	1.4	1.7	1.7
Number Killed	1.3	1.2	1.2	1.5	1.5	1.8	1.6	1.6	2.0	2.1	1.7	1.6	1.6	2.0	2.1
Non-Fatal Injury Collisions	63.1	60.9	58.7	58.3	57.0	83.2	82.0	80.0	80.0	78.5	81.5	81.0	79.6	79.7	78.7
Number Injured	91.7	88.3	85.8	85.5	84.0	120.7	118.9	117.0	117.5	115.7	118.3	117.5	116.4	117.0	115.9
Property Damage Only Collisions	292.6	286.6	261.6	278.8	266.2	385.4	386.1	356.5	382.9	366.4	377.6	381.3	354.6	381.2	367.3
Total Reportable Collisions	**356.9**	**348.5**	**321.3**	**338.3**	**324.4**	**470.0**	**469.5**	**437.9**	**464.6**	**446.7**	**460.5**	**463.7**	**435.6**	**462.5**	**447.8**

Observations

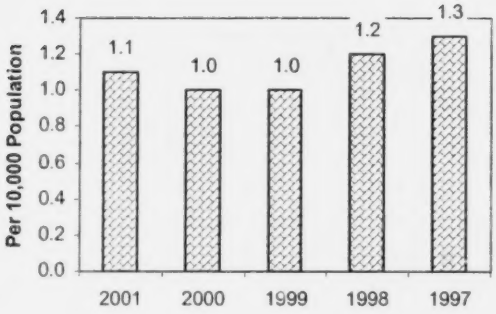
In terms of population, licensed drivers and registered vehicles the fatal collision and fatality rates are up slightly from 2000.

The non-fatal injury rate, has increased in 2001 in terms of population, licensed drivers and registered vehicles.

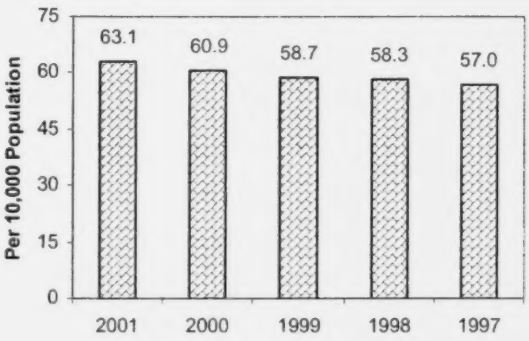
Property damage collision rates decreased in 2001 in terms of licensed drivers and registered vehicles.

*Sources:
Population - Statistics Canada as of July 1, 2001.
Licensed Drivers – Government Services - Registries, as of December 31, 2001.
Registered Vehicles – Government Services - Registries, as of December 31, 2001.

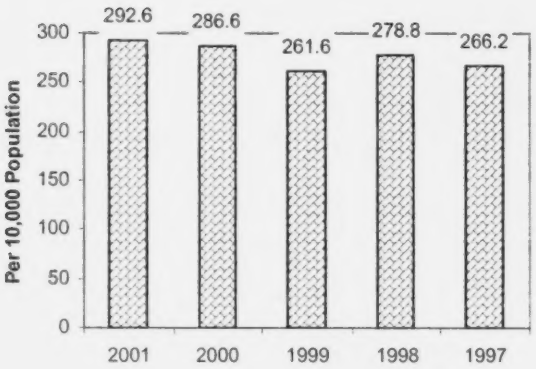
Fatal Collision Rates
Alberta 1997 - 2001



Injury Collision Rates
Alberta 1997-2001



Property Damage Collision Rates
Alberta 1997 - 2001



Overall Collision Rates
Alberta 1997 - 2001

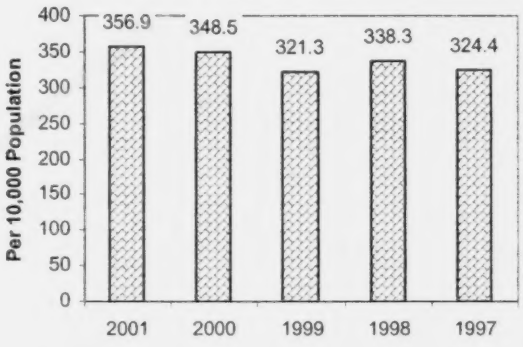


Figure 1

Table 1.3

Provincial Comparison of Casualty Rates Per 10,000 Population

1997 - 2001

	2001		2000		1999		1998		1997	
	Fatal	Injury	Fatal	Injury	Fatal	Injury	Fatal	Injury	Fatal	Injury
Alberta	1.3	91.7	1.2	88.3	1.2	85.8	1.5	85.5	1.5	84.0
British Columbia (1)	*	*	1.0	73.5	1.0	68.9	1.0	74.6	1.0	80.1
Saskatchewan	1.6	68.3	1.5	76.7	1.8	78.0	1.4	70.4	1.6	73.9
Manitoba	0.8	78.3	1.0	82.6	1.0	84.8	1.1	83.7	1.0	79.9
Ontario	*	*	0.7	72.8	0.8	73.0	0.7	*	0.8	75.0
Quebec (2)	0.8	66.9	1.0	69.8	1.0	65.8	1.0	64.1	1.1	64.4
New Brunswick	1.3	73.5	1.2	73.4	1.5	71.4	1.3	69.4	1.4	67.1
Nova Scotia	0.8	67.1	0.9	74.4	1.0	73.1	0.9	69.9	0.9	68.1
Prince Edward Island	0.9	79.3	1.4	85.2	1.4	78.9	1.5	67.2	1.5	65.7
Newfoundland	0.8	59.6	1.0	56.9	0.8	55.1	0.6	47.3	0.6	48.1

Observations

In order to get a clear picture of Alberta's traffic injuries in comparison to other provinces, rates rather than absolute numbers are utilized. In this instance, casualty rates per 10,000 population were examined.

Of the eight other provinces for which information was available one had a higher fatality rate than Alberta in terms of 10,000 population. Alberta recorded the highest injury rate, followed by Prince Edward Island and Manitoba.

*Figures not available at time of printing.

(1) These figures represent only those casualty collisions attended and reported by the police. They underestimate the actual numbers of casualties.
(2) Figures for 1999-2001 are not comparable to previous years due to reporting changes.

Sources: Casualty statistics supplied by each province and may be subject to revision. Population estimates, as of July 1, 2001, Statistics Canada.

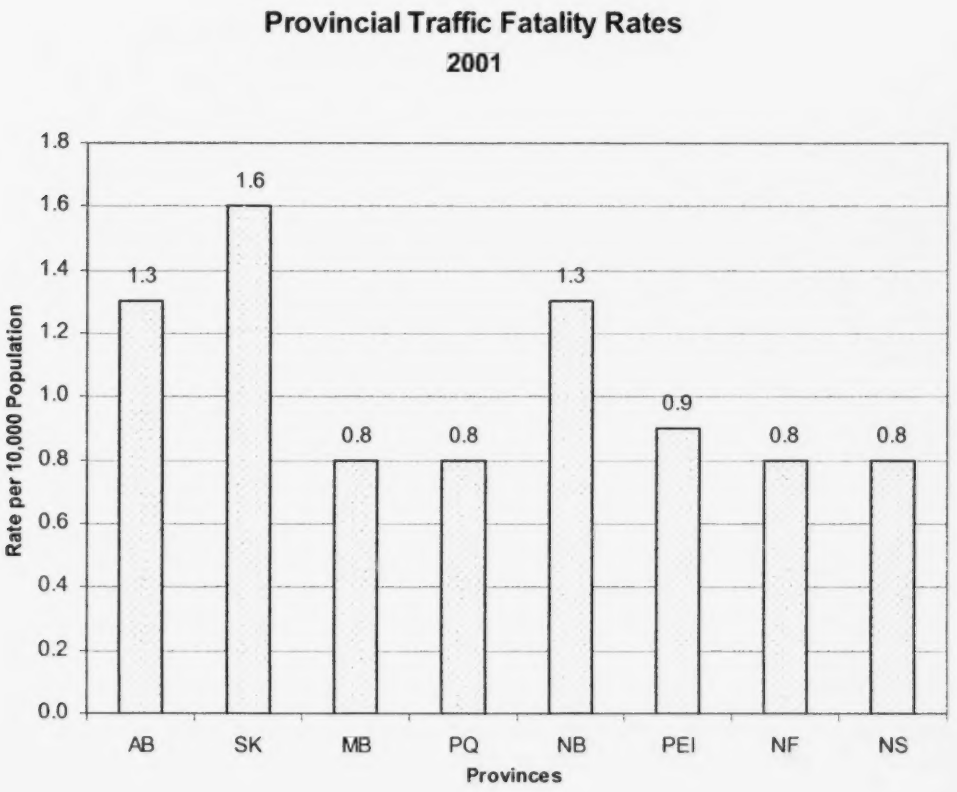

Provincial Traffic Fatality Rates
2001
Rate per 10,000 Population
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
1.3
1.6
0.8
0.8
1.3
0.9
0.8
0.8
AB
SK
MB
PQ
NB
PEI
NF
NS
Provinces

Figure 2

When the Collisions Occurred

Month

The month of December experienced more casualty collisions than other months. The highest number of property damage collisions was also recorded during the month of December.

Day of Week

The daily distribution of collisions indicated that Friday was the most collision-prone day of the week. The largest number of fatal crashes also occurred on Friday.

Time

The afternoon rush hour period (3:00 p.m. - 6:59 p.m.) accounted for the highest proportion of collisions. The least collision-prone time period was the early morning (3:00 a.m. - 6:59 a.m.).

Holidays

The Family Day Long Weekend recorded the highest number of individuals killed. The Labour Day Long Weekend recorded the highest number of injuries. The five-day Christmas season recorded the highest total number of collisions.

Table 2.1

Collision Occurrence by Month

2001

Month	Fatal Collisions N	%	Non-Fatal Injury Collisions N	%	Property Damage Collisions N	%	Total Collisions N	%
January	31	9.1	1333	7.0	7117	8.1	8481	7.9
February	19	5.6	1416	7.5	7546	8.6	8981	8.4
March	23	6.7	1430	7.5	6783	7.7	8236	7.7
April	26	7.6	1324	7.0	5750	6.5	7100	6.6
May	24	7.0	1569	8.3	5928	6.7	7521	7.0
June	36	10.6	1638	8.6	6666	7.6	8340	7.8
July	28	8.2	1639	8.6	6589	7.5	8256	7.7
August	39	11.4	1754	9.2	6818	7.7	8611	8.0
September	36	10.6	1608	8.5	6677	7.6	8321	7.7
October	32	9.4	1793	9.4	8060	9.2	9885	9.2
November	27	7.9	1654	8.7	9743	11.1	11424	10.6
December	20	5.9	1836	9.7	10145	11.5	12001	11.2
Unspecified	---	---	6	0.0	228	0.3	234	0.2
Total Number of Collisions	**341**	**100.00**	**19000**	**100.0**	**88050**	**100.0**	**107391**	**100.0**

Observations

The month of August experienced more fatal crashes than other months. The highest number of reported injury collisions was in December and the highest number of property damage collisions was also in the month of December.

Table 2.2

Collision Occurrence by Day of Week

2001

	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
Day of Week	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Monday	49	14.4	2639	13.9	12445	14.1	15133	14.1
Tuesday	39	11.4	2742	14.4	12647	14.4	15428	14.4
Wednesday	45	13.2	2788	14.7	12952	14.7	15785	14.7
Thursday	51	15.0	2908	15.3	13031	14.8	15990	14.9
Friday	61	17.9	3360	17.7	15343	17.4	18764	17.5
Saturday	44	12.9	2634	13.9	12115	13.8	14793	13.8
Sunday	52	15.2	1922	10.1	9222	10.5	11196	10.4
Unspecified	---	---	7	0.0	295	0.3	302	0.3
Total Number of Collisions	**341**	**100.0**	**19000**	**100.0**	**88050**	**100.0**	**107391**	**100.0**

Observations

The daily distribution of collisions indicated that overall Friday was the most collision-prone day of the week. The largest number of fatal crashes also occurred on Friday.

Table 2.3

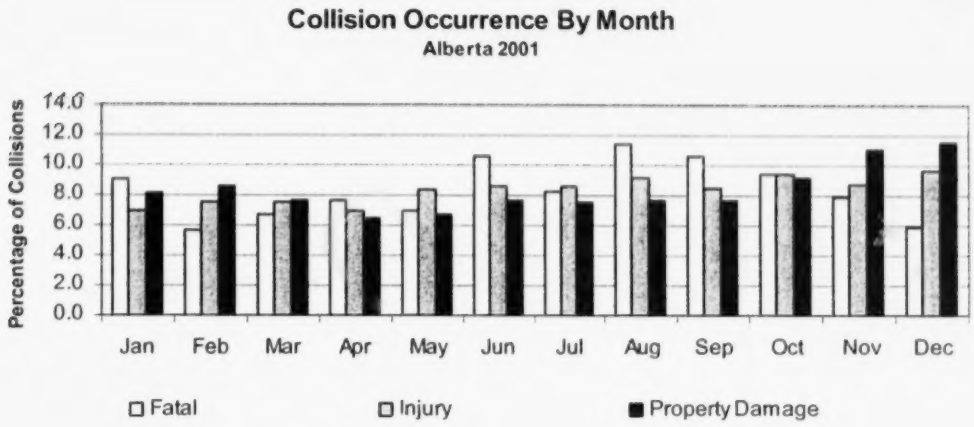
Collision Occurrence by Time Period

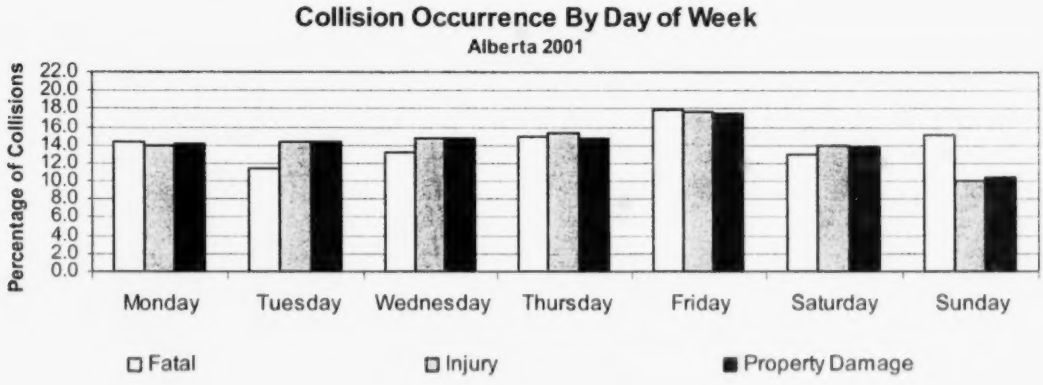
2001

Time Period	Fatal Collisions N	%	Non-Fatal Injury Collisions N	%	Property Damage Collisions N	%	Total Collisions N	%
11:00 p.m.- 2:59 a.m.	51	15.0	1420	7.5	7420	8.4	8891	8.3
3:00 a.m.- 6:59 a.m.	33	9.7	861	4.5	4534	5.1	5428	5.1
7:00 a.m.- 10:59 a.m.	48	14.1	3171	16.7	15028	17.1	18247	17.0
11:00 a.m.- 2:59 p.m.	54	15.8	4374	23.0	19881	22.6	24309	22.6
3:00 p.m.- 6:59 p.m.	65	19.1	6244	32.9	24637	28.0	30946	28.8
7:00 p.m.- 10:59 p.m.	78	22.9	2820	14.8	14723	16.7	17621	16.4
Unspecified	12	3.5	110	0.6	1827	2.1	1949	1.8
Total Number of Collisions	**341**	**100.0**	**19000**	**100.0**	**88050**	**100.0**	**107391**	**100.0**

Observations

The afternoon rush hour period (3:00 p.m. - 6:59 p.m.) accounted for the largest percentage (28.8%) of collisions occurring in a 24 hour period. The least collision-prone time period was the early morning (3:00 a.m. - 6:59 a.m.).


Collision Occurrence By Month
Alberta 2001
Percentage of Collisions
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Fatal
Injury
Property Damage


Collision Occurrence By Day of Week
Alberta 2001
Percentage of Collisions
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
Fatal
Injury
Property Damage

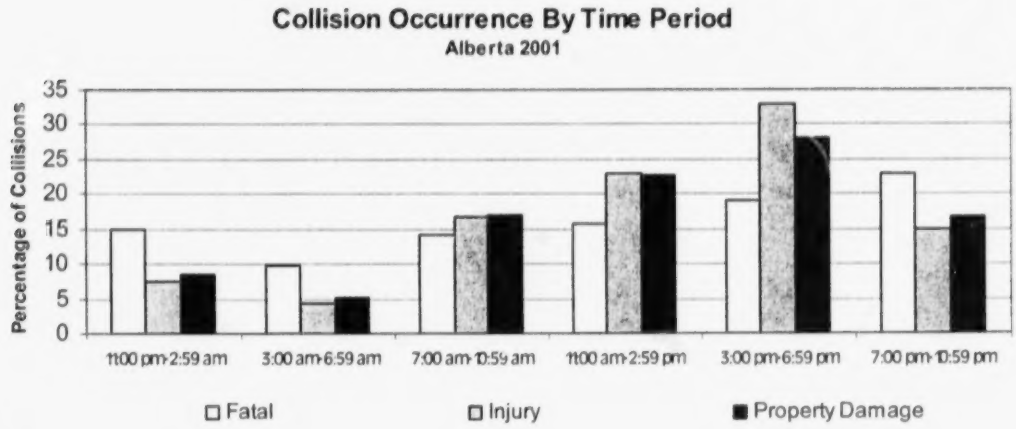

Collision Occurrence By Time Period
Alberta 2001
Percentage of Collisions
35
30
25
20
15
10
5
0
11:00 pm-2:59 am
3:00 am-6:59 am
7:00 am-10:59 am
11:00 am-2:59 pm
3:00 pm-6:59 pm
7:00 pm-10:59 pm
Fatal
Injury
Property Damage

Figure 3

Table 2.4

Collisions During 2001 Holidays

Holidays	Number Killed N	Number Injured N	Total Collisions* N
New Year's Day (January 1)	2	58	296
Family Day Long Weekend (February 16-19)	14	284	1153
Easter Long Weekend (April 12-16)	4	291	1007
Victoria Day Long Weekend (May 18-21)	3	293	798
Canada Day Long Weekend (June 29 – July 2)	8	267	1007
August Long Weekend (August 3-6)	5	261	955
Labour Day Long Weekend (August 31 - September 3)	5	377	1119
Thanksgiving Long Weekend (October 5-8)	6	307	1088
Remembrance Day Long Weekend (November 9-12)	0	290	1162
Christmas Season (December 22-26)	4	307	1445
Total	**51**	**2735**	**10030**

Observations

The Family Day Long Weekend recorded the highest number of individuals killed. The Labour Day Long Weekend recorded the highest number of injuries. The five-day Christmas season recorded the highest total number of collisions.

*Total collisions includes fatal, injury, and property damage collisions.

*Note: Comparisons should be done with caution. The number of days for each holiday period within the year may vary. From year to year, holiday periods may also vary in length.

Victims

Road User Class

The majority of traffic victims were drivers and passengers of vehicles. Pedestrians and motorcyclists accounted for 4.6% and 2.4% of the total casualties, respectively.

Age of Casualties

Casualty rates per 10,000 population were highest for persons between the ages of 15 and 24. The lowest casualty rates were recorded for children 14 and under.

Table 3.1

Injuries and Fatalities by Road User Class

2001

Road User Class	Persons Killed N	Persons Killed %	Persons Injured N	Persons Injured %	Total Casualties N	Total Casualties %
Drivers	201	49.8	16642	60.3	16843	60.2
Passengers	115	28.5	8043	29.2	8158	29.1
Pedestrians	33	8.2	1249	4.5	1282	4.6
Motorcyclists	21	5.2	653	2.4	674	2.4
Bicyclists	8	2.0	624	2.3	632	2.3
Other	9	2.2	305	1.1	314	1.1
Unspecified	17	4.2	67	0.2	84	0.3
Total Casualties	**404**	**100.0**	**27583**	**100.0**	**27987**	**100.0**

Observations

The majority of traffic victims were drivers and passengers of vehicles. Pedestrians and motorcyclists accounted for 4.6% and 2.4% of the total casualties, respectively.

Table 3.2

Age of Casualties

2001

Age In Years	Persons Killed N	Persons Killed %	Person Injured N	Person Injured %	Casualty Rate Per 10,000 Population*
Under 5	8	2.0	303	1.1	15.9
5-9	13	3.2	642	2.3	30.8
10 - 14	4	1.0	916	3.3	41.6
15 - 19	62	15.3	4071	14.8	185.7
20 - 24	54	13.4	4192	15.2	189.0
25 - 29	19	4.7	2897	10.5	128.8
30 - 34	34	8.4	2497	9.1	109.1
35 - 44	72	17.8	4871	17.7	92.8
45 - 54	47	11.6	3423	12.4	85.8
55 - 64	30	7.4	1669	6.1	72.4
65 and over	61	15.1	1494	5.4	51.4
Unspecified	---	---	608	2.2	
Total Casualties	**404**	**100.0**	**27583**	**100.0**	

Observations

Casualty rates per 10,000 population were highest for persons between the ages of 15 and 24. The lowest casualty rates were recorded for children 14 years of age and younger.

* Based on estimates of the Alberta population by age groups and sex, July 1, 2001, Statistics Canada.

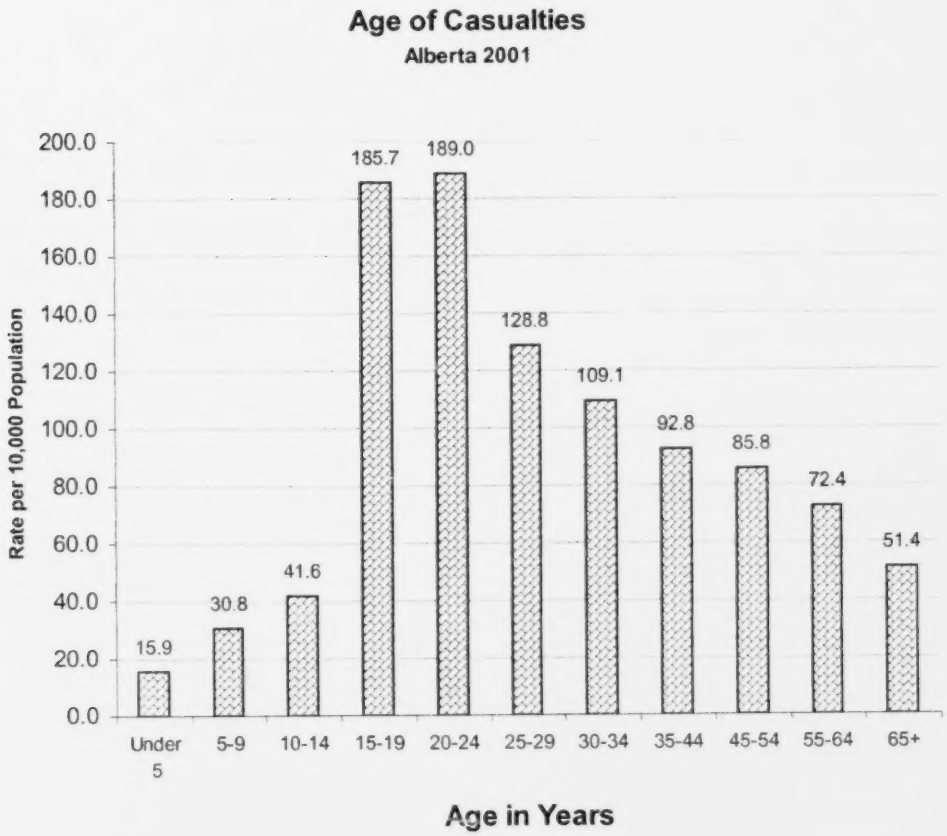

Age of Casualties
Alberta 2001
Rate per 10,000 Population
200.0
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
15.9
30.8
41.6
185.7
189.0
128.8
109.1
92.8
85.8
72.4
51.4
Under 5
5-9
10-14
15-19
20-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years

Figure 4

Drivers

Age and Sex of Drivers

Collision rates per 1000 licensed drivers indicated that 16-19 year old male drivers were more likely to be involved in casualty collision than any other age group.

Driver Actions

Following too closely (27.9%), running off the road (13.7%) and left turn across path (12.2%) were the most frequently identified improper driver actions contributing to casualty collisions.

Table 4.1

Age and Sex of Drivers Involved in Casualty Collisions:

Per 1,000 Licensed Drivers

2001

	Males			Females			Total*		
Age of Driver	N	%	Per 1000* Licensed Drivers	N	%	Per 1000** Licensed Drivers	N	%	Per 1000** Licensed Drivers
Under 16	222	0.6	14.3	92	0.3	7.3	314	0.9	11.1
16 – 17	989	2.8	30.0	752	2.1	25.9	1741	4.9	28.1
18 – 19	1521	4.3	36.1	950	2.7	25.3	2472	7.0	31.0
20 – 24	3303	9.3	28.6	2018	5.7	19.5	5323	15.1	24.4
25 – 34	4663	13.2	18.9	2987	8.5	13.4	7651	21.6	16.3
35 – 44	4380	12.4	15.9	3084	8.7	12.0	7465	21.1	14.0
45 - 54	3218	9.1	14.1	1969	5.6	5187	5187	14.7	12.0
55 - 64	1624	4.6	12.6	894	2.5	8.0	2518	7.1	10.4
65 and over	1295	3.7	10.5	689	1.9	7.1	1984	5.6	9.0
Unspecified	160	0.5		62	0.2		700	2.0	
Total Number of Drivers	**21375**	**60.5**	**17.7**	**13497**	**38.2**	**12.5**	**35355**	**100.0**	

Observations

Collision rates per 1000 licensed drivers indicated that 18 to19 year olds were more likely to be involved in a casualty collision than any other age group. The next age group most likely to be involved in casualty collisions were 16 to 17 year olds.

*Total includes drivers whose sex was not specified on the collision report form.

**Source: Government Services - Registries. Operator Statistics, December 31, 2001

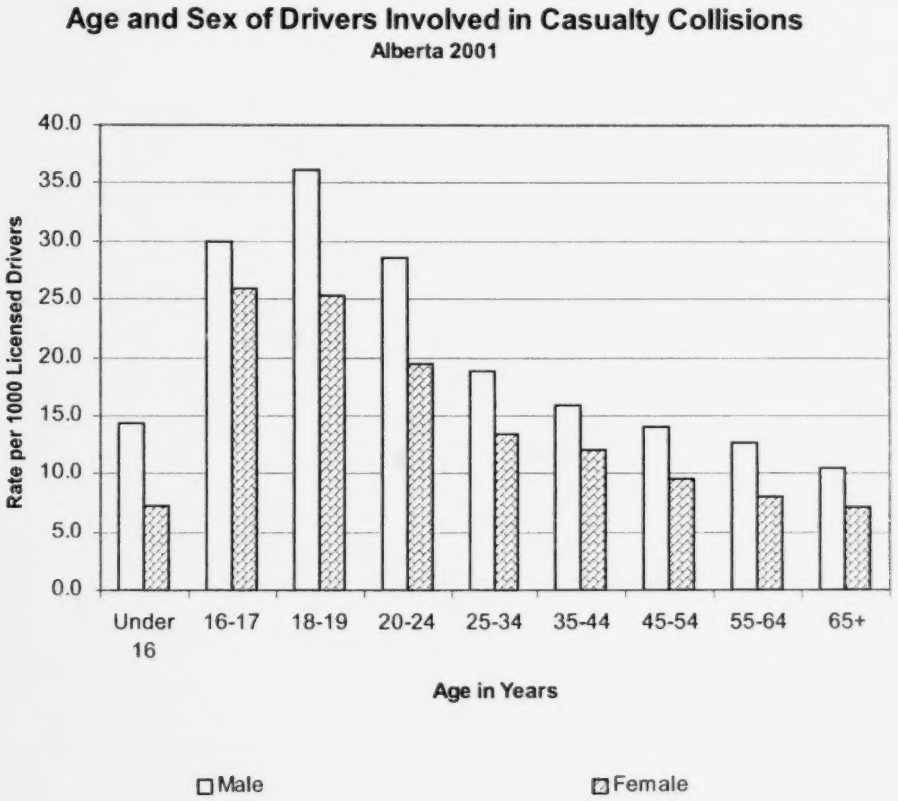

Age and Sex of Drivers Involved in Casualty Collisions
Alberta 2001
Rate per 1000 Licensed Drivers
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Under 16
16-17
18-19
20-24
25-34
35-44
45-54
55-64
65+
Age in Years
Male
Female

Figure 5

Table 4.2

Improper Actions of Drivers Involved in Casualty Collisions*

2001

Improper Actions	Drivers in Fatal Collisions N	%	Drivers in Non-Fatal Injury Collisions N	%	Total Drivers in Casualty Collisions N	%
Followed Too Closely	8	2.9	3830	28.4	3838	27.9
Ran Off Road	122	44.5	1759	13.1	1881	13.7
Left Turn Across Path	16	5.8	1667	12.4	1683	12.2
Stop Sign Violation	35	12.8	1136	8.4	1171	8.5
Disobey Traffic Signal	10	3.6	1081	8.0	1091	7.9
Fail to Yield Right of Way to Pedestrian	10	3.6	387	2.9	397	2.9
Improper Lane Change	3	1.1	375	2.8	378	2.7
Left of Center	40	14.6	315	2.3	355	2.6
Backed Unsafely	--	--	352	2.6	352	2.6
Fail to Yield Right of Way Uncontrolled Intersection	6	2.2	305	2.3	311	2.3
Yield Sign Violation	2	0.7	297	2.2	299	2.2
Improper Turn	1	0.4	292	2.2	293	2.1
Improper Passing	5	1.8	119	0.9	124	0.9
Other	16	5.8	1563	11.6	1579	11.5
Total Number of Drivers	**274**	**100.0**	**13478**	**100.0**	**13752**	**100.0**

Observations

Following too closely (27.9 %), running off the road (13.7%) and left turn across path (12.2%) were the most frequently identified improper driver actions contributing to casualty collisions.

*Based on those cases where driver actions were specified on the collision report form.

Note: There was a total of 29420 drivers involved in casualty collisions for which a driver action was specified on the collision report form. 15668 were indicated as driving properly at the time of the collision.

Vehicles

Types of Vehicles

Passenger cars (56.0%) and pickup trucks/vans (21.2%) were the vehicles most frequently involved in total casualty collisions.

Vehicular Factors

Less than 1.0% of vehicles involved in casualty collisions were identified as having a vehicle defect. The most common defect was defective brakes.

Point of Impact

The most common point of impact in casualty collisions involved the front of the vehicle. Approximately 44.1% of the impacts involved the centre front.

Table 5.1

Types of Vehicles Involved in Casualty Collisions*

2001

Type of Vehicle	Vehicles in Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
Passenger Car	170	32.8	19962	56.3	20132	56.0
Pickup Truck/Van	153	29.5	7464	21.1	7617	21.2
Mini-Van/MPV	78	15.0	5032	14.2	5110	14.2
Truck 4500 kg+	35	6.7	830	2.3	865	2.4
Motorcycle	21	4.0	629	1.8	650	1.8
Bicycle	8	1.5	628	1.8	636	1.8
Truck-Tractor	43	8.3	507	1.4	550	1.5
Transit Bus	--	--	82	0.2	82	0.2
Off Highway Vehicle	4	0.8	77	0.2	81	0.2
School Bus	1	0.2	54	0.2	55	0.2
Emergency Vehicle	1	0.2	52	0.1	53	0.1
Other Bus	--	--	32	0.1	32	0.1
Motorhome	2	0.4	22	0.1	24	0.1
Farm Equipment	2	0.4	20	0.1	22	0.1
Motorized Snow Vehicle	1	0.2	21	0.1	22	0.1
Construction Equipment	--	--	22	0.1	22	0.1
Intercity Bus	--	--	4	0.0	4	0.0
Moped	--	--	2	0.0	2	0.0
Other	--	--	5	0.0	5	0.0
Total Number of Vehicles	**519**	**100.0**	**35445**	**100.0**	**35964**	**100.0**

Observations

Passenger cars and pickup trucks/vans were the vehicles most frequently involved in total casualty collisions. Overall, bicycles represented 1.8% and motorcycles 1.8% of the vehicles involved in casualty collisions. Truck tractors were 1.5% of total vehicles in casualty crashes, but 8.3% of vehicles in fatal crashes.

*Based on those cases where type of vehicle was specified on the collision report form.

Table 5.2

Vehicular Factors Involved in Casualty Collisions*

2001

Vehicular Factors	Vehicles in Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
No Apparent Defect	391	97.3	28877	99.2	29268	99.1
Defective Brakes	3	0.7	76	0.3	79	0.3
Tires Failed	3	0.7	42	0.1	45	0.2
Lighting Defect	1	0.2	24	0.1	25	0.1
Improper Load/Shift	1	0.2	17	0.1	18	0.1
Other	3	0.7	82	0.3	85	0.3
Total Number of Vehicles	**402**	**100.0**	**29118**	**100.0**	**29520**	**100.0**

Observations

Less than 1.0% of vehicles involved in casualty collisions were identified as having a vehicle defect. The most common was defective brakes.

*Based on those cases where a vehicle factor was specified on the collision report form. This information does not indicate whether or not a mechanical inspection of the collision-involved vehicle was conducted.

Table 5.3

Point of Impact on Vehicles Involved in Casualty Collisions*

2001

Point of Impact	Vehicles In Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
Centre Front	216	42.9	14903	44.2	15119	44.1
Centre Rear	21	4.2	8285	24.6	8306	24.3
Left Front	22	4.4	2307	6.8	2329	6.8
Right Front	25	5.0	2151	6.4	2176	6.4
Rollover	119	23.7	1552	4.6	1671	4.9
Right Side	37	7.4	1325	3.9	1362	4.0
Left Side	33	6.6	1316	3.9	1349	3.9
Right Rear	6	1.2	796	2.4	802	2.3
Left Rear	5	1.0	712	2.1	717	2.1
Attachment	14	2.8	214	0.6	228	0.7
Undercarriage	2	0.4	113	0.3	115	0.3
Top	3	0.6	71	0.2	74	0.2
Total Number of Vehicles	**503**	**100.0**	**33745**	**100.0**	**34248**	**100.0**

Observations

The most common point of impact in casualty collisions involved the front of the vehicle. 44.1% of the impacts involved the centre front, while 24.3% of the impacts involved the centre rear.

*Based on those cases for which the point of impact was specified on the collision report form.

Environment

Location

The majority of fatal crashes (74.2%) occurred in rural areas, whereas the majority of injury (81.2%) and property damage (79.7%) crashes occurred in urban areas.

Surface Conditions

The majority (70.9%) of all casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 11.1% of fatal collisions and 13.9% of non-fatal injury collisions.

Table 6.1

Location of Collisions

2001

Location	Fatal Collisions N	%	Non-Fatal Injury Collisions N	%	Property Damage Only Collisions N	%	Total Collisions N	%
Urban	88	25.8	15425	81.2	70189	79.7	85702	79.8
Rural	253	74.2	3575	18.8	17861	20.3	21689	20.2
Total Number of Collisions	**341**	**100.0**	**19000**	**100.0**	**88050**	**100.0**	**107391**	**100.0**

Observations

Collisions which occurred in rural areas accounted for 74.2% of all fatal crashes. Collisions occurring in urban areas resulted in the highest proportion of non-fatal injury collisions (81.2%) and property damage crashes (79.7%).

Table 6.2

Casualty Collision Occurrence by Surface Condition

2001

Surface Condition	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
Dry	259	76.0	13462	70.9	13721	70.9
Slush/Snow/Ice	38	11.1	2635	13.9	2673	13.8
Wet	18	5.3	1412	7.4	1430	7.4
Loose Surface Material	16	4.7	369	1.9	385	2.0
Muddy	1	0.3	29	0.2	30	0.2
Other	7	2.1	90	0.5	97	0.5
Unspecified	2	0.6	1003	5.3	1005	5.2
Total Number of Collisions	**341**	**100.0**	**19000**	**100.0**	**19341**	**100.0**

Observations

The majority (70.9%) of casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 11.1% of fatal collisions and 13.9% of non-fatal injury collisions.

Special Types of Vehicles

Motorcycles

- Based on motorcycle registrations, the involvement rate of motorcycles in both fatal and injury collisions has increased in 2001.
- The majority of motorcycle casualty collisions involved male drivers. Motorcycle drivers under the age of 25 had the highest involvement rate per 1000 licensed drivers. In particular 16 and 17 year old motorcycle drivers had an involvement rate per 1000 licensed driver of 61.2, a rate over two and one half times greater than that of the 20-24 year old motorcycle drivers.
- Compared to drivers involved in total casualty collisions, motorcycle drivers were more likely to run off the road or pass improperly. However, motorcycle drivers were less likely to follow too closely, make an unsafe left turn or disobey a traffic control device.
- Compared to drivers involved in all types of vehicle casualty collisions, motorcycle drivers were almost twice as likely to have consumed alcohol before the crash.
- Vehicular factors were identified for 1.8% of motorcycles involved in casualty collisions compared to 0.9% for all types of vehicles involved in casualty collisions.
- The majority of casualty collisions involving motorcycles occurred on dry roads.

Table 7.1

Motorcycles Involved in Casualty Collisions

1997 - 2001

Number of Motorcycles	**2001**	**2000**	**1999**	**1998**	**1997**
Fatal	21	14	11	24	7
Non-Fatal Injury	629	476	447	463	385
Total Number of Motorcycles Involved in Casualty Collisions	**650**	**490**	**458**	**487**	**392**
Casualties*					
Number Killed	21	14	10	26	8
Number Injured	701	540	509	528	454
Total Casualties in Collisions Involving Motorcycles	**722**	**554**	**519**	**554**	**462**
Number of Motorcycles Involved in Casualty Collisions Per 10,000 Registered Motorcycles**					
Fatal Collisions	4.2	3.2	2.8	6.4	2.0
Non-Fatal Injury Collisions	126.9	109.3	112.9	123.4	109.0

Observations

Based on motorcycle registrations, the involvement rate of motorcycles in both fatal collisions and injury collisions has increased in 2001.

*This refers to the total number of people killed and injured in collisions in which a motorcycle was involved. It does not refer to the number of motorcyclists killed and injured.

**Source: Based on vehicle registration statistics, Government Services - Registries, December 31, 2001.

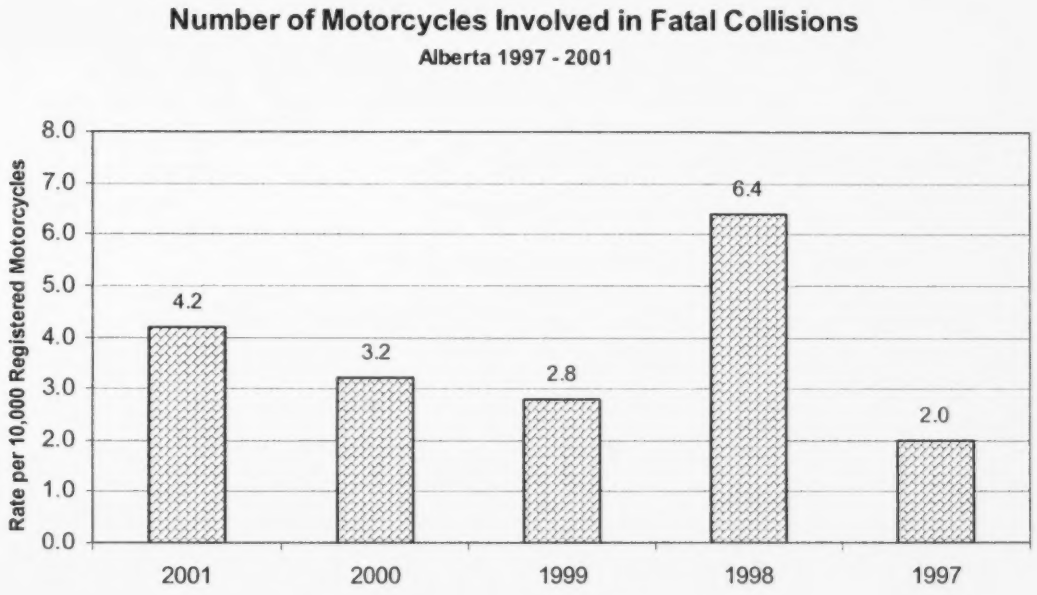

Number of Motorcycles Involved in Fatal Collisions
Alberta 1997 - 2001
Rate per 10,000 Registered Motorcycles
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
4.2
3.2
2.8
6.4
2.0
2001
2000
1999
1998
1997

Figure 6

Table 7.2

Age and Sex of Motorcycle Drivers Involved in Casualty Collisions

2001

Age of Motorcycle Driver	Male		Female		Total*		Rate Per 1,000 Licensed Motorcycle Drivers**
	N	%	N	%	N	%	
Under 16	7	1.1	--	--	7	1.1	
16 - 17	16	2.5	1	0.2	17	2.6	61.2
18 - 19	42	6.5	2	0.3	44	6.8	39.2
20 - 24	166	25.8	7	1.1	173	26.9	22.7
25 - 34	124	19.3	8	1.2	132	20.5	3.9
35 - 44	114	17.7	18	2.8	132	20.5	2.1
45 - 54	94	14.6	7	1.1	101	15.7	1.7
55 - 64	21	3.3	3	0.5	24	3.7	1.3
65 and over	5	0.8	--	--	5	0.8	0.6
Unspecified	--	--	--	--	9	1.4	
Total Number of Motorcycle Drivers	**589**	**91.5**	**46**	**7.1**	**644**	**100.0**	

Observations

The majority of motorcycle casualty collisions involved male drivers. Based on involvement per 1,000 licensed operators, motorcycle drivers under the age of 25 were most likely to be involved in collisions. In particular, 16 and 17 year old motorcycle drivers had the highest involvement rate per 1,000 licensed motorcyclists. These age and sex comparisons are limited due to the lack of driving exposure data. That is, in order to make valid age comparisons, it is important to take into account the number of kilometres driven annually by each age and sex group of motorcycle operators.

Note: In Alberta, Class 6 (motorcycle) licenses are not issued to operators under 16 years of age.

*Total includes drivers whose sex was not specified on the collision report form.

**Source: Government Services - Registries. Operator Statistics, December 31, 2001.

Table 7.3

Improper Actions of Motorcycle Drivers Involved in Casualty Collisions*

2001

Improper Actions of Motorcycle Driver	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Ran Off Road	103	38.1	13.7
Followed Too Closely	33	12.2	27.9
Left Turn Across Path	13	4.8	12.2
Left of Center	12	4.4	2.6
Disobey Traffic Signal	9	3.3	7.9
Improper Passing	8	3.0	0.9
Stop Sign Violation	7	2.6	8.5
Improper Lane Change	6	2.2	2.7
Failed to Yield Right of Way Uncontrolled Intersection	6	2.2	2.3
Improper Turn	5	1.9	2.1
Yield Sign Violation	3	1.1	2.2
Failed to Yield Right of Way to Pedestrian	1	0.4	2.9
Backed Unsafely	1	0.4	2.6
Other	63	23.3	11.5
Total Number of Motorcycle Drivers	**270**	**100.0**	

Observations

Compared to drivers involved in total casualty collisions, motorcycle drivers were more likely to run off the road or pass improperly. However, motorcycle drivers were less likely to follow too closely, make an unsafe left turn or disobey a traffic control device.

*Based on those cases where driver actions were specified on the collision report form.

Note: There was a total of 518 motorcycle drivers involved in casualty collisions for which a driver action was specified on the collision report form. 248 were indicated as driving properly at the time of the collision.

Table 7.4

Condition of Motorcycle Drivers* Involved in Casualty Collisions

2001

Condition of Motorcycle Driver	N	%	Driver Condition in Total Casualty Collisions (All Vehicle Types) %
Normal	492	89.8	93.2
Had Been Drinking	34	6.2	2.4
Alcohol Impaired	21	3.8	2.8
Total Alcohol Involvement	**55**	**10.0**	**5.2**
Other	1	0.2	1.6
Total Number of Motorcycle Drivers	**548**	**100.0**	

Observations

The motorcycle driver's condition was a contributory factor for 10.0% of the involved motorcycle drivers. Compared to drivers involved in total casualty collisions, motorcycle drivers were almost twice as likely to have consumed alcohol prior to the crash.

*Based on those cases where driver condition was specified on the collision report form.

Table 7.5

Motorcycle Vehicular Factors* in Casualty Collisions

2001

Vehicular Factors	N	%	Vehicular Factors in Total Casualty Collisions (All Vehicle Types) %
No Apparent Defect	543	98.2	99.1
Tires Failed	5	0.9	0.2
Defective Brakes	1	0.2	0.3
Other	4	0.7	0.5
Total Number of Motorcycles	**553**	**100.0**	

Observations

Vehicular factors were identified for 1.8% of the motorcycles involved in casualty collisions, compared to 0.9% for all types of vehicles involved in casualty collisions.

*Based on those cases where a vehicular factor was specified on the collision report form. This does not indicate that a mechanical inspection of the collision-involved motorcycle was conducted.

Table 7.6

Casualty Collisions Involving Motorcycles:

Month of Occurrence

2001

Month	N	%
January	1	0.2
February	--	--
March	17	2.7
April	51	8.1
May	96	15.2
June	113	17.9
July	122	19.3
August	87	13.8
September	77	12.2
October	51	8.1
November	16	2.5
December	1	0.2
Total Number of Collisions	**632**	**100.0**

Observations

The month of July recorded the highest proportion of casualty crashes involving motorcycles.

Table 7.7

Casualty Collisions Involving Motorcycles:

Road Surface Condition

2001

Road Surface Condition	N	%
Dry	542	85.8
Loose Surface Material	37	5.9
Wet	27	4.3
Muddy	2	0.3
Slush/Snow/Ice	1	0.2
Other	4	0.6
Unspecified	19	3.0
Total Number of Collisions	**632**	**100.0**

Observations

The majority of casualty collisions involving motorcycles occurred on dry roads. Wet roads were the scene of 4.3% of motorcycle casualty collisions. Loose material on the road surface was involved in 5.9% of motorcycle casualty crashes.

Special Types of Vehicles

Truck Tractors

- In 2001 there were 52 persons killed and 686 injured in collisions involving truck tractors. This represents an decrease in casualties from 2000.
- Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road, make an improper lane change or pass improperly. However, operators of truck tractors were less likely than other vehicle operators to follow too closely, make a left turn across path, or commit a stop sign violation.
- Truck tractor drivers were less likely to consume alcohol before the crash than were drivers in total casualty collisions.
- Vehicular factors were more likely to be present in truck tractor casualty collisions than in total casualty collisions.
- The occurrence of casualty collisions involving truck tractors was highest in the month of January.

Table 7.8

Truck Tractors Involved in Casualty Collisions

1997- 2001

Number of Truck Tractors	2001	2000	1999	1998	1997
Fatal	43	60	41	48	68
Non-Fatal Injury	507	512	445	523	545
Total Number of Truck Tractors Involved in Casualty Collisions	**550**	**572**	**486**	**571**	**613**
Casualties*					
Number Killed	52	76	48	57	86
Number Injured	686	740	606	687	741
Total Casualties in Collisions Involving Truck Tractors	**738**	**816**	**654**	**744**	**827**

Observations

In 2001 there were 52 persons killed and 686 injured in collisions involving truck tractors. This represents a decrease in casualties from 2000. The total number of truck tractors involved in casualty crashes decreased in 2001 standing at 550 compared to the five-year high of 613 recorded in 1997.

*This refers to the total number of people killed and injured in collisions in which a truck tractor was involved. It does not refer to the number of truck tractor drivers killed and injured.

Table 7.9

Casualty Collisions Involving Truck Tractors:
Improper Actions* of Truck Tractor Drivers Involved in Casualty Collisions
2001

Improper Driver Actions	N	%	Driver Actions in Total Casualty Collisions (All Types of Vehicles) %
Ran Off Road	64	32.7	13.7
Followed Too Closely	40	20.4	27.9
Improper Lane Change	13	6.6	2.7
Stop Sign Violation	10	5.1	8.5
Disobey Traffic Signal	10	5.1	7.9
Left Turn Across Path	9	4.6	12.2
Improper Turn	7	3.6	2.1
Left of Center	7	3.6	2.6
Improper Passing	5	2.6	0.9
Yield Sign Violation	4	2.0	2.2
Backed Unsafely	3	1.5	2.6
Failed to Yield Right of Way – Uncontrolled Intersection	3	1.5	2.3
Failed to Yield Right of Way to Pedestrian	1	0.5	2.9
Other	20	10.2	11.5
Total Number of Drivers	**196**	**100.0**	

Observations

Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road, make an improper lane change or pass improperly. However, operators of truck tractors were less likely than other vehicle operators to follow too closely, make a left turn across path or commit a stop sign violation.

*Based on those cases where driver actions were specified on the collision report form.

Note: There was a total of 439 truck-tractor drivers involved in casualty collisions for which a driver action was specified on the collision report form. 243 were indicated as driving properly at the time of the collision.

Table 7.10

Casualty Collisions Involving Truck Tractors:

Condition* of Truck Tractor Drivers Involved in Casualty Collisions

2001

Driver Condition	N	%	Driver Condition in Total Casualty Collisions (All Types of Vehicles) %
Normal	429	95.1	93.2
Had Been Drinking	3	0.7	2.4
Total Alcohol Involvement	**3**	**0.7**	**5.2**
Fatigued/Asleep	14	3.1	0.9
Impaired by Drugs	1	0.2	0.1
Other	4	0.9	3.4
Total Number of Drivers	**451**	**100.0**	

Observations

The condition of the truck tractor driver was a contributory factor for 4.9% of the drivers involved. Truck tractor drivers were less likely to consume alcohol before the crash than were drivers involved in total casualty collisions (0.7% compared to 5.2%). However, they were more likely to have been fatigued or asleep at the time of the crash.

*Based on those cases where driver condition was specified on the collision report form.

Table 7.11

Casualty Collisions Involving Truck Tractors:

Vehicular Factors* of Truck Tractors Involved in Casualty Collisions

2001

Vehicular Factors	N	%	Vehicular Factors in Total Casualty Collisions (All Types of Vehicles) %
No Apparent Defect	439	95.2	99.1
Improper Load/Shift	7	1.5	0.1
Tires Failed	6	1.3	0.2
Defective Brakes	3	0.7	0.3
Other	6	1.3	0.4
Total Number of Truck Tractors	**461**	**100.0**	

Observations

Vehicular factors were identified for 4.8% of truck tractors involved in casualty collisions. Vehicular factors were more likely to be present in truck tractor collisions than in total casualty collisions.

*Based on those cases where vehicular factor was specified on the collision report form. This information does not indicate whether or not a mechanical inspection of the collision-involved truck tractor was conducted.

Table 7.12

Casualty Collisions Involving Truck Tractors:

Month of Occurrence

2001

Month	N	%
January	55	10.4
February	49	9.2
March	51	9.6
April	35	6.6
May	41	7.7
June	39	7.4
July	40	7.5
August	52	9.8
September	28	5.3
October	39	7.4
November	48	9.1
December	53	10.0
Total Number of Collisions	**530**	**100.0**

Observations

The occurrence of casualty collisions involving truck tractors was highest in the month of January. The lowest number of truck tractor casualty collisions occurred during September.

Special Types of Vehicles

Trains

- In 2001, 6 people were killed and 30 people were injured in crashes in which a train was involved. The number of casualties involving trains has decreased from 2000.
- The largest number of casualty collisions involving trains occurred in the month of November.
- A large percentage of drivers involved in collisions with a train disobeyed a traffic control device.

Table 7.13

Trains Involved in Casualty Collisions

1997 - 2001

Number of Trains	2001	2000	1999	1998	1997
Fatal	6	3	3	5	3
Non-Fatal Injury	25	20	19	26	29
Total Number of Trains Involved in Casualty Collisions	**31**	**23**	**22**	**31**	**32**
Casualties*					
Number Killed	6	4	4	5	4
Number Injured	30	34	27	50	39
Total Casualties in Collisions Involving Trains	**36**	**38**	**31**	**55**	**43**

Observations

The number of trains involved in casualty collisions increased from 2000. The number of casualties resulting from these collisions has decreased.

*This refers to the total number of people killed and injured in collisions involving a train.

Table 7.14

Casualty Collisions Involving Trains:

Month of Occurrence

2001

Month	Fatal Collisions N	Fatal Collisions %	Non-Fatal Injury Collisions N	Non-Fatal Injury Collisions %	Total Casualty Collisions N	Total Casualty Collisions %
January	--	--	1	4.0	1	3.2
February	2	33.3	3	12.0	5	16.1
March	1	16.7	3	12.0	4	12.9
April	--	--	2	8.0	2	6.5
May	1	16.7	1	4.0	2	6.5
June	--	--	1	4.0	1	3.2
July	--	--	1	4.0	1	3.2
August	--	--	1	4.0	1	3.2
September	1	16.7	2	8.0	3	9.7
October	--	--	2	8.0	2	6.5
November	--	--	7	28.0	7	22.6
December	1	16.7	1	4.0	2	6.5
Total Number of Collisions	**6**	**100.0**	**25**	**100.0**	**31**	**100.0**

Observations

The largest number of casualty collisions involving trains occurred in the month of November.

Table 7.15

Casualty Collisions Involving Trains:

Actions* of Drivers Involved in Casualty Collisions with Trains

2001

Driver Actions	Drivers in Fatal Collisions N	%	Drivers in Non-Fatal Injury Collisions N	%	Total Drivers in Casualty Collisions N	%
Disobey Traffic Signal	3	60.0	13	61.9	16	61.5
Stop Sign Violation	--	--	4	19.0	4	15.4
Failed to Yield Right of Way Uncontrolled Intersection	--	--	3	14.3	3	11.5
Ran Off Road	2	40.0	--	--	2	7.7
Other	--	--	1	4.8	1	3.8
Total Number of Drivers	**5**	**100.0**	**21**	**100.0**	**26**	**100.0**

Observations

A large percentage of drivers involved in collisions with a train disobeyed a traffic control device.

*Based on those cases where driver actions were specified on the collision report form.

Pedestrians

- Pedestrian casualty collisions were more likely to occur from September to November. September accounted for the largest number of collisions, while February experienced the least number of pedestrian crashes.
- Pedestrian casualty collisions were most likely to occur on Friday and least likely to occur on Sunday.
- Pedestrian casualty collisions were most likely to occur during the evening rush-hour period (3:00 p.m. to 6:59 p.m.).
- 35.4% of the drivers in collisions involving a pedestrian were recorded as failing to yield the right of way to the pedestrian.
- The casualty rate per population was highest for pedestrians between the ages of 15 and 19.
- Of pedestrians involved in injury collisions, 17.4% had consumed alcohol before the collision, compared to 30.0% involved in fatal collisions.
- Of those pedestrians who had consumed alcohol prior to the collision, the highest rate of involvement per 10,000 population was for pedestrians 20-24 years of age.

Table 8.1

Casualty Collisions Involving Pedestrians:

Month of Occurrence

2001

Month of Collision	N	%
January	99	8.0
February	83	6.7
March	101	8.2
April	84	6.8
May	90	7.3
June	97	7.9
July	93	7.5
August	111	9.0
September	125	10.1
October	123	10.0
November	118	9.6
December	110	8.9
Unspecified	1	0.1
Total Number of Collisions	**1235**	**100.0**

Observations

Pedestrian casualty collisions were more likely to occur from September to November. September accounted for the largest number of collisions, while February experienced the least number of pedestrian crashes.

Table 8.2

Casualty Collisions Involving Pedestrians:

Day of Week

2001

Day of Week	N	%
Monday	184	14.9
Tuesday	170	13.8
Wednesday	199	16.1
Thursday	177	14.3
Friday	201	16.3
Saturday	197	16.0
Sunday	105	8.5
Unspecified	2	0.2
Total Number of Collisions	**1235**	**100.0**

Observations

Pedestrian casualty collisions were most likely to occur on Friday and least likely to occur on Sunday.

Table 8.3

Casualty Collisions Involving Pedestrians:

Time Period

2001

Time Period	N	%
11:00 p.m. - 2:59 a.m.	124	10.0
3:00 a.m. - 6:59 a.m.	45	3.6
7:00 a.m. - 10:59 a.m.	184	14.9
11:00 a.m. - 2:59 p.m.	288	23.3
3:00 p.m. - 6:59 p.m.	379	30.7
7:00 p.m. - 10:59 p.m.	205	16.6
Unspecified	10	0.8
Total Number of Collisions	**1235**	**100.0**

Observations

Pedestrian casualty collisions were most likely to occur during the evening rush-hour period from 3:00 p.m. to 6:59 p.m. These collisions were least likely to occur during the early morning hours (3:00 a.m. to 6:59 a.m.).

Table 8.4

Casualty Collisions Involving Pedestrians:

Location

2001

Location	N	%
Urban	1179	95.5
Rural	56	4.5
Total Number of Collisions	**1235**	**100.0**

Observations

The majority of pedestrian casualty collisions (95.5%) occurred in urban areas. Only 4.5% occurred in rural areas.

Table 8.5

Casualty Collisions Involving Pedestrians:

Actions* of Drivers Involved in Casualty Collisions with Pedestrians

2001

Driver Actions	N	%
Driving Properly	400	39.9
Failed to Yield Right of Way To Pedestrian	355	35.4
Backed Unsafely	72	7.2
Disobey Traffic Signal	20	2.0
Stop Sign Violation	17	1.7
Ran Off Road	14	1.4
Failed to Yield Right of Way Uncontrolled Intersection	11	1.1
Improper Turn	10	1.0
Followed Too Closely	8	0.8
Left of Centre	8	0.8
Left Turn Across Path	3	0.3
Yield Sign Violation	3	0.3
Improper Lane Change	2	0.2
Improper Passing	1	0.1
Other	79	7.9
Total Number of Drivers	**1003**	**100.0**

Observations

39.9% of the drivers involved in pedestrian crashes were recorded as driving properly. However, 35.4% of the drivers involved in pedestrian casualty collisions failed to yield the right of way to the pedestrian.

*Based on those cases where driver actions were specified on the collision report form.

Table 8.6

Age of Pedestrian Casualties

2001

Age in Years	Pedestrians Killed N	Pedestrians Injured N	Total Pedestrian Casualties N	%	Pedestrian Casualty Rate Per 10,000 Population*
Under 5	1	19	20	1.6	1.0
5 – 9	1	60	61	4.8	2.9
10 – 14	2	149	151	11.8	6.8
15 – 19	2	169	171	13.3	7.7
20 – 24	3	151	154	12.0	6.9
25 – 29	1	108	109	8.5	4.8
30 – 34	2	87	89	6.9	3.8
35 – 44	7	181	188	14.7	3.5
45 – 54	4	127	131	10.2	3.2
55 – 64	4	70	74	5.8	3.2
65 and over	6	117	123	9.6	4.1
Unspecified	–	11	11	0.9	
Total Number of Pedestrian Casualties	**33**	**1249**	**1282**	**100.0**	

Observations

The casualty rate per population was highest for pedestrians between the ages of 15 and 19. The lowest casualty rate was recorded for persons under 5 years of age.

*Source: Based on estimates of the Alberta population by age groups and sex, July 1, 2001, Statistics Canada.

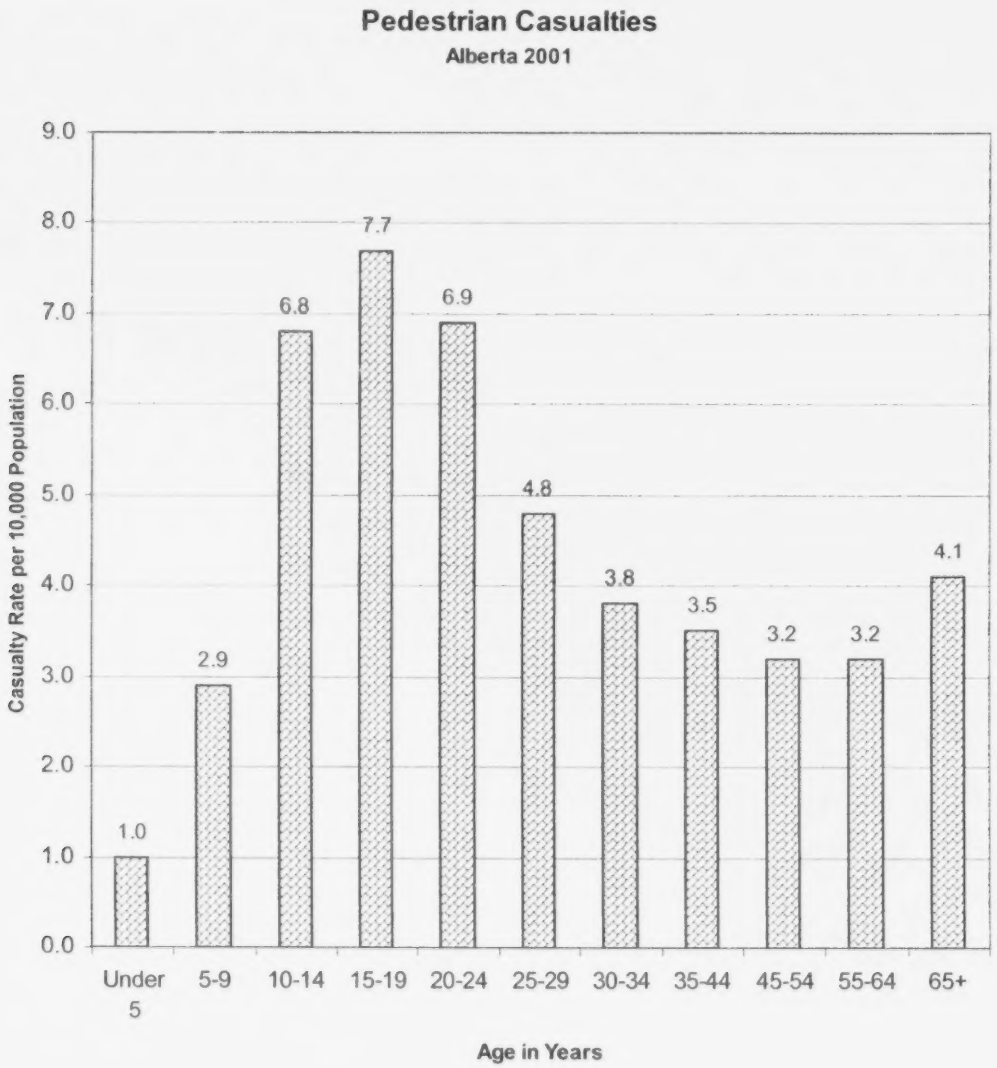

Pedestrian Casualties
Alberta 2001
Casualty Rate per 10,000 Population
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1.0
2.9
6.8
7.7
6.9
4.8
3.8
3.5
3.2
3.2
4.1
Under 5
5-9
10-14
15-19
20-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years

Figure 7

Table 8.7

Condition of Pedestrians* Involved in Casualty Collisions

2001

Condition of Pedestrian	Pedestrians in Fatal Collisions N	%	Pedestrians in Non-Fatal Injury Collisions N	%	Total Pedestrians in Casualty Collisions N	%
Normal	12	60.0	808	81.3	820	80.9
Had Been Drinking	4	20.0	92	9.3	96	9.5
Alcohol Impaired	2	10.0	81	8.1	83	8.2
Total Alcohol Involvement	**6**	**30.0**	**173**	**17.4**	**179**	**17.7**
Drugs	1	5.0	2	0.2	3	0.3
Other	1	5.0	11	1.1	12	1.2
Total Number of Pedestrians	**20**	**100.0**	**994**	**100.0**	**1014**	**100.0**

Observations

Of pedestrians involved in injury collisions, 17.4% had consumed alcohol before the collision, compared to 30.0% involved in fatal collisions. As the severity of the collision increased, the involvement of alcohol increased dramatically.

*Based only on those cases where pedestrian condition was specified on the collision report form.

Table 8.8

Age of Drinking Pedestrians* Involved in Casualty Collisions

2001

Age in Years	N	%	Rate per 10,000 Population**
10-14	--	--	--
15 - 19	18	10.1	0.8
20 - 24	34	19.0	1.5
25 - 29	20	11.2	0.9
30 - 34	25	14.0	1.1
35 - 44	47	26.3	0.9
45 - 54	25	14.0	0.6
55 - 64	7	3.9	0.3
65 and over	--	--	--
Unspecified	3	1.7	
Total Number of Pedestrian Casualties	**179**	**100.0**	

Observations

Of those pedestrians who had consumed alcohol prior to the collision, the highest rate of involvement per 10,000 population was for pedestrians 20-24 years of age.

*Based on those cases where Pedestrian Condition was specified on the collision report form.

**Source: Based on estimates of the Alberta population by age groups and sex, July 1, 2001, Statistics Canada.

Bicyclists

- Casualty collisions involving bicycles were more likely to occur in the month of August.
- Weekdays experienced the most casualty collisions involving bicycles. As well, the largest number of these crashes (40.0%) occurred during the evening rush-hour period.
- Young bicyclists, 10-14 years of age, were the group most frequently involved in bicycle casualty crashes.
- Compared to operators of all vehicles in casualty collisions, bicyclists were more likely to fail to yield right-of-way at an uncontrolled intersection or disobey a traffic signal.
- 5.0% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

Table 9.1

Casualty Collisions Involving Bicycles:

Month of Occurrence

2001

Month	N	%
January	13	2.1
February	13	2.1
March	27	4.3
April	38	6.0
May	86	13.6
June	83	13.1
July	92	14.6
August	111	17.6
September	68	10.8
October	69	10.9
November	26	4.1
December	5	0.8
Unspecified	1	0.2
Total Number of Collisions	**632**	**100.0**

Observations

The majority of casualty crashes involving bicycles occurred during the month of August.

Table 9.2

Casualty Collisions Involving Bicycles:

Day of Week

2001

Day of Week	N	%
Monday	87	13.8
Tuesday	103	16.3
Wednesday	95	15.0
Thursday	114	18.0
Friday	109	17.2
Saturday	72	11.4
Sunday	51	8.1
Unspecified	1	0.2
Total Number of Collisions	**632**	**100.0**

Observations

Casualty collisions involving bicycles were more likely to occur on weekdays.

Table 9.3

Casualty Collisions Involving Bicycles:

Time Period

2001

Time Period	N	%
11:00 p.m. - 2:59 a.m.	24	3.8
3:00 a.m. - 6:59 a.m.	10	1.6
7:00 a.m. - 10:59 a.m.	120	19.0
11:00 a.m. - 2:59 p.m.	131	20.7
3:00 p.m. - 6:59 p.m.	253	40.0
7:00 p.m. - 10:59 p.m.	90	14.2
Unspecified	4	0.6
Total Number of Collisions	**632**	**100.0**

Observations

The largest proportion of casualty crashes (40.0%) involving bicycles occurred during the evening rush-hour period of 3:00 p.m. - 6:59 p.m.

Table 9.4

Age and Sex of Bicyclists Involved in Casualty Collisions

2001

Age of Bicyclist	Male		Female		Total*	
	N	%	N	%	N	%
Under 5	2	0.3	1	0.2	3	0.5
5 - 9	41	6.4	21	3.3	62	9.7
10 - 14	92	14.5	26	4.1	118	18.6
15 - 19	63	9.9	19	3.0	82	12.9
20 - 24	44	6.9	37	5.8	81	12.7
25 - 29	39	6.1	18	2.8	57	9.0
30 - 34	51	8.0	21	3.3	72	11.3
35 - 44	69	10.8	21	3.3	91	14.3
45 - 54	27	4.2	8	1.3	35	5.5
55 - 64	13	2.0	2	0.3	15	2.4
65 and over	6	0.9	--	--	6	0.9
Unspecified	7	1.1	3	0.5	14	2.2
Total Number of Bicyclists	**454**	**71.4**	**177**	**27.8**	**636**	**100.0**

Observations

The majority of bicycle casualty collisions involved male bicyclists. The 10-14 year old age group was most frequently involved in these collisions.

*Total includes bicyclists whose sex was not specified on the collision report form.

Table 9.5

Improper Actions of Bicyclists Involved in Casualty Collisions*

2001

Improper Actions of Bicyclist	N	%	Driver Actions In Total Casualty Collisions (All Vehicle Types) %
Disobey Traffic Signal	48	18.0	7.9
Failed to Yield Right of Way Uncontrolled Intersection	47	17.6	2.3
Left of Center	11	4.1	2.6
Stop Sign Violation	10	3.7	8.5
Improper Lane Change	10	3.7	2.7
Left Turn Across Path	8	3.0	12.2
Ran Off Road	8	3.0	13.7
Yield Sign Violation	7	2.6	2.2
Improper Passing	6	2.2	0.9
Improper Turn	5	1.9	2.1
Followed Too Closely	2	0.7	27.9
Failed to Yield Right of Way to Pedestrian	1	0.4	2.9
Backed Unsafely	1	0.4	2.6
Other	103	38.6	11.5
Total Number of Bicyclists	**267**	**100.0**	

Observations

Compared to operators of all vehicles in casualty collisions, bicyclists were more likely to fail to yield right-of-way at an uncontrolled intersection or disobey a traffic signal.

*Based on those cases where driver actions were specified on the collision report form.

Note: There was a total of 444 bicyclists involved in casualty collisions for which a driver action was specified on the collision report form. 177 were indicated as driving properly at the time of the collision.

Table 9.6

Condition of Bicyclists Involved in Casualty Collisions*

2001

Condition of Bicyclist	N	%
Normal	503	93.8
Had Been Drinking	18	3.4
Alcohol Impaired	9	1.7
Total Alcohol Involvement	**27**	**5.0**
Fatigued	2	0.4
Other	4	0.7
Total Number of Bicyclists	**536**	**100.0**

Observations

5.0% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

*Based on those cases where bicyclist condition was specified on the collision report form.

Traffic Safety Issues

Alcohol Involvement

- A total of 5.0% of drivers involved in injury crashes were judged to have consumed alcohol prior to the crash, compared to 21.0% of drivers involved in fatal collisions. As the severity of the collision increased, the involvement of alcohol dramatically increased.
- In terms of involvement per 1,000 licensed drivers, males between 18 and 21 years of age were most likely to have been drinking before the crash. There were over six times as many male drivers as female drivers who had consumed alcohol prior to the collision.
- In 2001, alcohol related casualty crashes were most likely to have occurred in August, on Saturday, and between 11:00 p.m. and 2:59 a.m.
- Figure 8 provides a graphic representation of the involvement of drinking drivers in casualty collisions over the past five years, 1997-2001.

Table 10.1

Condition of Drivers in Casualty Collisions*

2001

Condition of Driver	Drivers in Fatal Collisions N	%	Drivers in Non-Fatal Injury Collisions N	%	Total Drivers in Casualty Collisions N	%
Normal	319	76.1	26665	93.4	26984	93.2
Had Been Drinking	47	11.2	654	2.3	701	2.4
Alcohol Impaired	41	9.8	777	2.7	818	2.8
Total Alcohol Involvement	**88**	**21.0**	**1431**	**5.0**	**1519**	**5.2**
Impaired by Drugs	1	0.2	35	0.1	36	0.1
Fatigued/Asleep	8	1.9	246	0.9	254	0.9
Other	3	0.7	157	0.6	160	0.6
Total Number of Drivers	**419**	**100.0**	**28534**	**100.0**	**28953**	**100.0**

Observations

Of drivers involved in injury collisions, 5.0% had consumed alcohol before the crash, compared to 21.0% in fatal collisions. As the severity of the collision increased, the involvement of alcohol dramatically increased. Overall, 5.2% of drivers involved in casualty collisions were judged to have consumed alcohol before the crash.

*Based on those cases where driver condition was specified on the collision report form. These numbers do not include bicyclists (see Table 9.6, page 65).

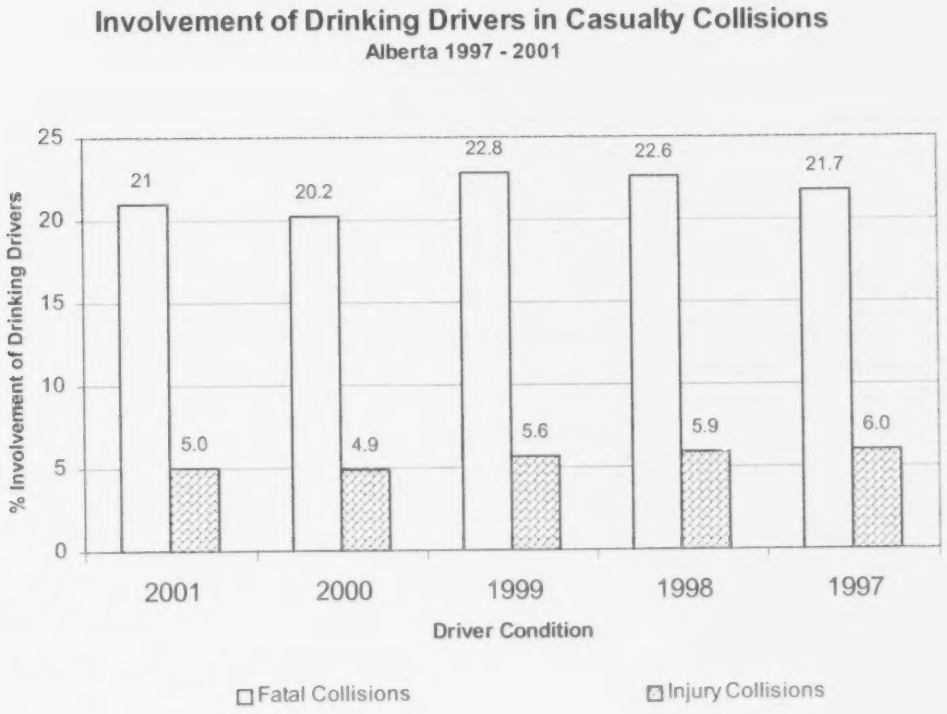

Involvement of Drinking Drivers in Casualty Collisions
Alberta 1997 - 2001
% Involvement of Drinking Drivers
25
20
15
10
5
0
21
5.0
20.2
4.9
22.8
5.6
22.6
5.9
21.7
6.0
2001
2000
1999
1998
1997
Driver Condition
Fatal Collisions
Injury Collisions

Figure 8

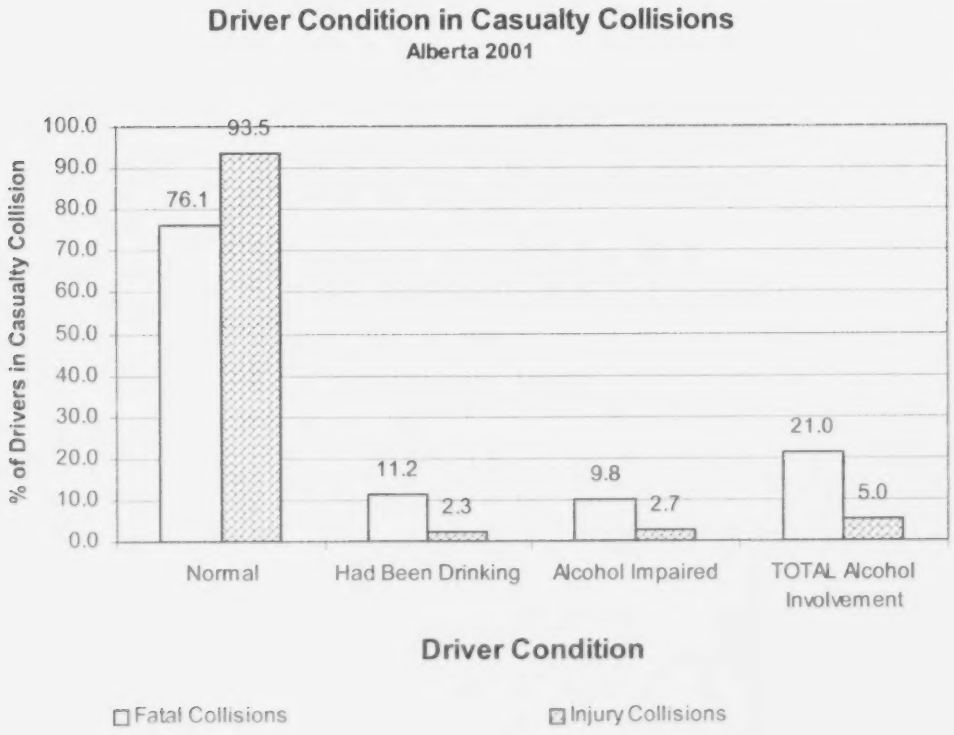

Driver Condition in Casualty Collisions
Alberta 2001
% of Drivers in Casualty Collision
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
76.1
93.5
11.2
2.3
9.8
2.7
21.0
5.0
Normal
Had Been Drinking
Alcohol Impaired
TOTAL Alcohol Involvement
Driver Condition
Fatal Collisions
Injury Collisions

Figure 9

Table 10.2

Age and Sex of Drinking Drivers in Casualty Collisions*

2001

Age in Years	Male N	%	Rate Per 1000** Licensed Drivers	Female N	%	Rate Per 1000** Licensed Drivers	Total* N	%	Rate Per 1000** Licensed Drivers
Under 16	8	0.5	0.5	2	0.1	0.2	10	0.7	0.4
16 - 17	42	2.8	1.3	8	0.5	0.3	50	3.3	0.8
18 - 19	123	8.1	2.9	31	2.0	0.8	154	10.1	2.0
20 - 21	153	10.0	3.5	17	1.1	0.4	171	11.3	2.1
22 - 24	153	10.1	2.1	24	1.6	0.4	177	11.7	1.3
25 - 29	191	12.6	1.5	32	2.1	0.3	223	14.7	1.0
30 - 34	156	10.3	1.3	26	1.7	0.2	182	12.0	0.8
35 - 44	280	18.5	1.0	45	3.0	0.2	325	21.4	0.6
45 - 54	127	8.4	0.6	15	1.0	0.1	142	9.3	0.3
55 - 64	40	2.6	0.3	5	0.3	0.0	45	3.0	0.2
65 and over	19	1.3	0.2	1	0.1	0.0	20	1.3	0.1
Unspecified	3	0.2	--	1	0.1	--	20	1.3	--
Total Drivers	**1295**	**85.4**		**207**	**13.6**		**1519**	**100.0**	

Observations

Of those collision-involved drivers who had consumed alcohol, there were over six times as many male drivers as female drivers. The majority were male drivers between 25 and 44 years of age. In terms of involvement per 1,000 licensed drivers, males 18-21 years of age were more likely to have consumed alcohol prior to a casualty collision than any other age group.

Drinking drivers include those indicated on the collision report form as having been drinking prior to the crash and those who were alcohol-impaired at the time of the crash. Whether or not the driver was actually charged is not taken into consideration by the collision report form.

*Includes only drivers whose age and/or sex was specified on the collision report form. Total includes drinking drivers whose sex was not specified on the collision report form.

**Source: Government - Registries. Operator Statistics, December 31, 2001.

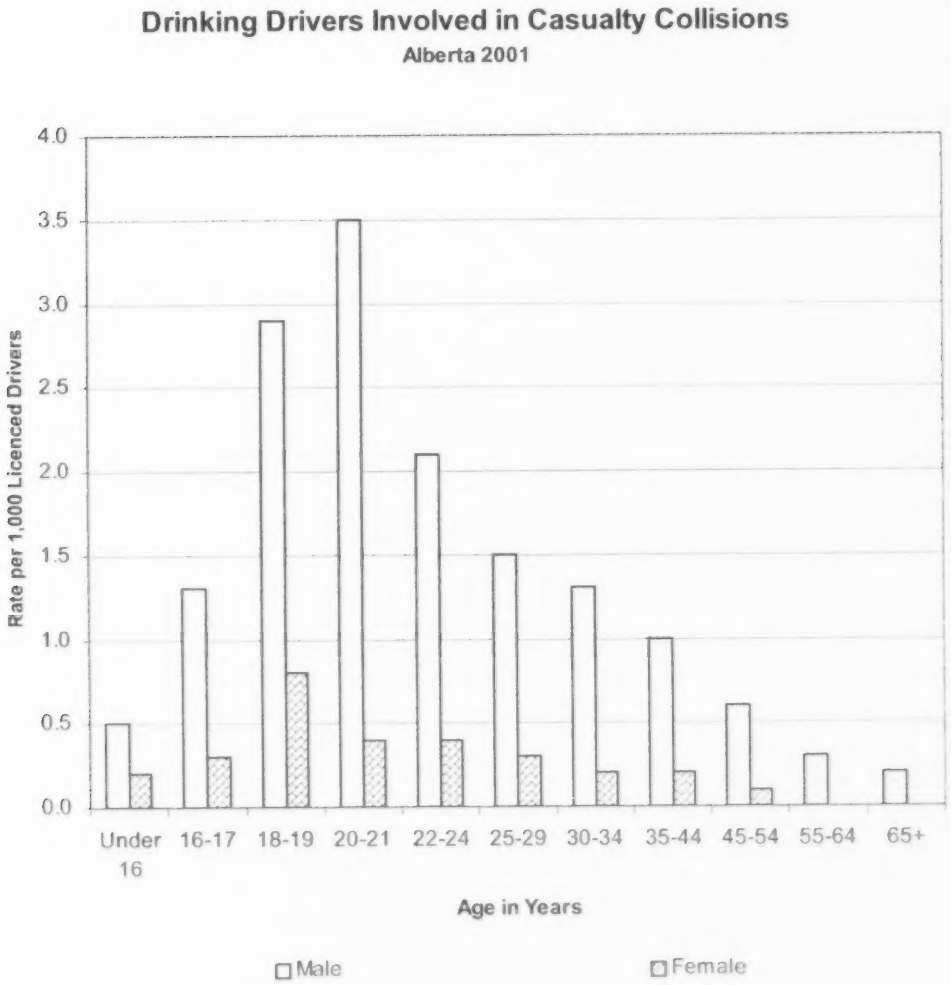

Drinking Drivers Involved in Casualty Collisions
Alberta 2001
Rate per 1,000 Licenced Drivers
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Under 16
16-17
18-19
20-21
22-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years
Male
Female

Figure 10

Table 10.3

Alcohol-Involved Casualty Collisions:

Month of Occurrence

2001

	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
Month	**N**	**%**	**N**	**%**	**N**	**%**
January	6	6.8	93	6.6	99	6.6
February	6	6.8	85	6.0	91	6.1
March	8	9.1	117	8.3	125	8.4
April	6	6.8	104	7.4	110	7.3
May	8	9.1	123	8.7	131	8.8
June	6	6.8	144	10.2	150	10.0
July	8	9.1	117	8.3	125	8.4
August	7	8.0	144	10.2	151	10.1
September	12	13.6	115	8.2	127	8.5
October	9	10.2	126	8.9	135	9.0
November	5	5.7	122	8.7	127	8.5
December	7	8.0	118	8.4	125	8.4
Unspecified	--	--	1	0.1	1	0.1
Total Number of Collisions	**88**	**100.0**	**1409**	**100.0**	**1497**	**100.0**

Observations

The month of August accounted for the largest proportion of alcohol-involved casualty collisions. The month of February accounted for the smallest proportion of alcohol-involved casualty collisions.

Table 10.4

Alcohol-Involved Casualty Collisions:

Day of Week

2001

	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
Day of Week	**N**	**%**	**N**	**%**	**N**	**%**
Monday	8	9.1	124	8.8	132	8.8
Tuesday	8	9.1	108	7.7	116	7.7
Wednesday	11	12.5	151	10.7	162	10.8
Thursday	11	12.5	160	11.4	171	11.4
Friday	19	21.6	270	19.2	289	19.3
Saturday	14	15.9	343	24.3	357	23.8
Sunday	17	19.3	252	17.9	269	18.0
Unspecified	--	--	1	0.1	1	0.1
Total Number of Collisions	**88**	**100.0**	**1409**	**100.0**	**1497**	**100.0**

Observations

The highest number of alcohol-involved fatal collisions occurred on Friday (21.6%). The highest number of non-fatal injury collisions occurred on Saturday (24.3%). The smallest number of alcohol-involved casualty collisions occurred on Monday and Tuesday.

Table 10.5

Alcohol-Involved Casualty Collisions:

Time Period

2001

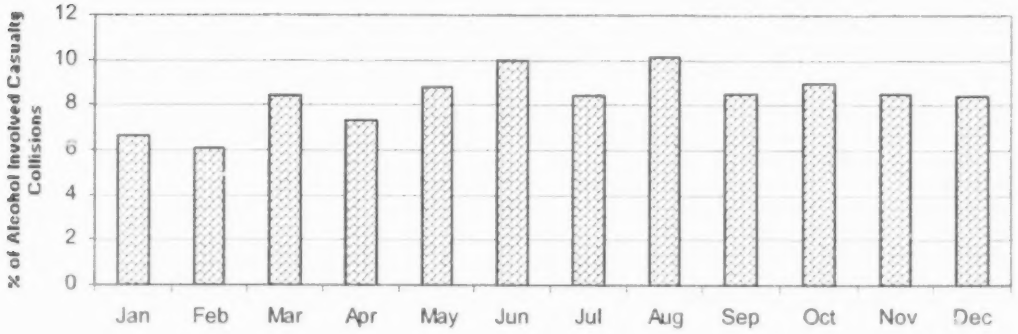
	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
Time of Day	**N**	**%**	**N**	**%**	**N**	**%**
11:00 p.m. - 2:59 a.m.	22	25.0	448	31.8	470	31.4
3:00 a.m. - 6:59 a.m.	15	17.0	248	17.6	263	17.6
7:00 a.m. - 10:59 a.m.	4	4.5	49	3.5	53	3.5
11:00 a.m. - 2:59 p.m.	3	3.4	65	4.6	68	4.5
3:00 p.m. - 6:59 p.m.	12	13.6	204	14.5	216	14.4
7:00 p.m. - 10:59 p.m.	28	31.8	371	26.3	399	26.7
Unspecified	4	4.5	24	1.7	28	1.9
Total Number of Collisions	**88**	**100.0**	**1409**	**100.0**	**1497**	**100.0**

Observations

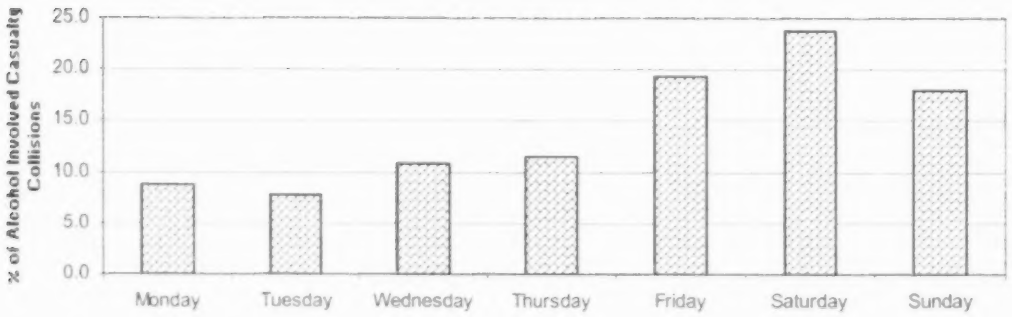
The late night/early morning time period (11:00 p.m. - 2:59 a.m.) was most likely to record alcohol-involved casualty collisions (31.4%). The morning hours (7:00 a.m. - 10:59 a.m.) were least likely to record alcohol-involved casualty crashes (3.5%).

Alcohol Involved Casualty Collisions
Alberta 2001

By Month of Occurrence



By Day of Week



By Time Period

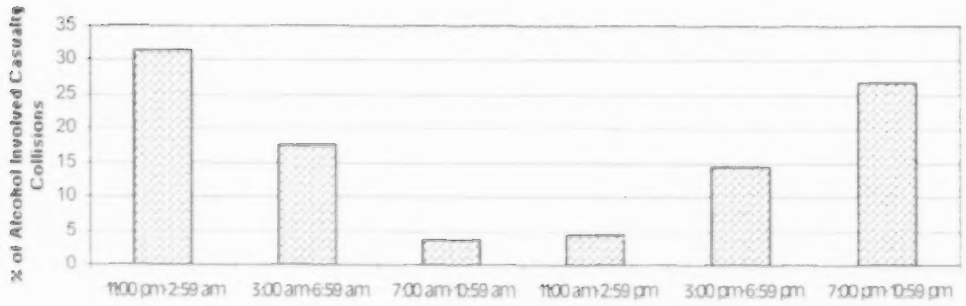


Figure 11

Traffic Safety Issues

Restraint Use

- Collision involved restraint users had a much lower injury rate (14.2%) than those not using restraints (37.8%).
- Non-restraint users were more than two and one-half times more likely than restraint users to be injured.

Table 10.6

Restraint Use of Vehicle Occupants and Injury Severity* (Use versus Non-Use)

2001

Injury Severity of Occupants	Percentage of Occupants Using Restraints	Percentage of Occupants Not Using Restraints
	%	%
Fatal Injury	0.1	2.8
Major Injury	1.0	11.7
Minor Injury	13.2	26.1
Total Occupants Sustaining Non-Fatal Injuries	**14.2**	**37.8**
No Apparent Injury	85.7	59.4
Total Occupants	**100.0**	**100.0**

Observations

Collision involved restraint users had a much lower injury rate (14.2%) than those not using restraints (37.8%). Non-restraint users were more than two and one-half times as likely as restraint users to be injured.

Injury Severity

Fatal - A fatal injury is the death of a person that occurs as a result of a motor vehicle collision within 30 days of the collision.

Major - Persons with injuries or complaint of pain that went to the hospital and were subsequently admitted even if for observation only.

Minor - Persons with injuries or complaint of pain that went to the hospital, were treated in emergency (or refused treatment) and SENT HOME without ever being admitted to the hospital. (Also includes persons who indicate they intend to seek medical attention).

*Based on those cases where occupant restraint use and injury severity were specified on the collision report form.